

the operator(s) of any other space station licensed to use the band.

[30 FR 7176, May 28, 1965, as amended at 36 FR 2562, Feb. 6, 1971; 38 FR 8573, Apr. 4, 1973; 42 FR 8329, Feb. 9, 1977; 44 FR 77167, Dec. 31, 1979; 50 FR 40862, Oct. 7, 1985; 58 FR 13419, Mar. 11, 1993; 58 FR 44904, Aug. 25, 1993; 59 FR 53329, Oct. 21, 1994; 61 FR 8477, Mar. 5, 1996; 61 FR 9945, Mar. 12, 1996; 61 FR 44181, Aug. 28, 1996]

#### § 25.204 Power limits.

(a) In bands shared coequally with terrestrial radio communication services, the equivalent isotropically radiated power transmitted in any direction towards the horizon by an earth station operating in frequency bands between 1 and 15 GHz, shall not exceed the following limits except as provided for in paragraph (c) of this section:

+40 dBW in any 4 KHz band for  $\theta < 0^\circ$

+40+3  $\theta$  dBW in any 4 KHz band for  $0^\circ < \theta \leq 05^\circ$

where  $\theta$  is the angle of elevation of the horizon viewed from the center of radiation of the antenna of the earth station and measured in degrees as positive above the horizontal plane and negative below it.

(b) In bands shared coequally with terrestrial radio-communication services, the equivalent isotropically radiated power transmitted in any direction towards the horizon by an earth station operating in frequency bands above 15 GHz shall not exceed the following limits except as provided for in paragraph (c) of this section:

+64 dBW in any 1 MHz band for  $\theta < 0^\circ$

+64+3  $\theta$  dBW in any 1 MHz band for  $0^\circ < \alpha < 5^\circ$

where  $\theta$  is as defined in paragraph (a) of this section.

(c) For angles of elevation of the horizon greater than  $5^\circ$  there shall be no restriction as to the equivalent isotropically radiated power transmitted by an earth station towards the horizon.

(d) Notwithstanding the e.i.r.p. and e.i.r.p. density limits specified in the station authorization, each earth station transmission shall be conducted at the lowest power level that will provide the required signal quality as indicated in the application and further amended by coordination agreements.

(e) For operations at frequencies above 10 GHz, earth station operators may exceed the uplink e.i.r.p. and e.i.r.p. density limits specified in the station authorization under the conditions of uplink fading due to precipitation by an amount not to exceed 1 dB above the actual amount of monitored excess attenuation over clear sky propagation conditions. The e.i.r.p. levels shall be returned to normal as soon as the attenuating weather pattern subsides. The maximum power level for power control purposes shall be coordinated between and among adjacent satellite operators.

(f) The e.i.r.p. of any emission from an earth station operating in the frequency band 13.75–14.0 GHz shall be at least 68 dBW and shall not exceed 85 dBW, with a minimum antenna diameter of 4.5 meters; except in the frequency band 13.772–13.778 GHz, where the e.i.r.p. shall be at least 68 dBW and shall not exceed 71 dBW per 6 MHz, with a minimum antenna diameter of 4.5 meters. Automatic power control may be used to increase the e.i.r.p. density above 71 dBW per 6 MHz to compensate for rain attenuation to the extent that the power flux density at the fixed-satellite space station does not exceed the value resulting from use of 71 dBW per 6 MHz e.i.r.p. in clear sky conditions.

[48 FR 40255, Sept. 6, 1983, as amended at 58 FR 13420, Mar. 11, 1993; 61 FR 52307, Oct. 7, 1996]

#### § 25.205 Minimum angle of antenna elevation.

Earth station antennas shall not normally be authorized for transmission at angles less than  $5^\circ$  measured from the horizontal plane to the direction of maximum radiation. However, upon a showing that the transmission path will be seaward and away from land masses or upon special showing of need for lower angles by the applicant, the Commission will consider authorizing transmissions at angles between  $3^\circ$  and  $5^\circ$  in the pertinent directions. In certain instances, it may be necessary to specify minimum angles greater than  $5^\circ$  because of interference considerations.

[48 FR 40255, Sept. 6, 1983]